

WHAT IS CLAIMED IS:

1. An exposure method including:

a first step of forming on a substrate an alignment mark including a concave and convex pattern, said mark being
5 formed by said concave and convex pattern arranged with a pitch which is smaller than the predetermined value between adjacent convex portions having a width of not less than a predetermined value;

a second step of forming a coat over said alignment
10 mark and the other area on said substrate;

a third step of flattening said coat; and

a fourth step of applying a photosensitive material on said coat flattened by said third step and projecting a mask pattern thereto.

15 2. An exposure method according to Claim 1, wherein the distance between said adjacent convex portions of said alignment mark having a width of not less than a predetermined value is not less than 2 μm .

3. An exposure method according to Claim 1 or 2, wherein
20 the pitch of said concave and convex pattern is not more than resolution of an alignment sensor.

4. An exposure method according to Claim 3, wherein said concave and convex pattern is regular.

5. An exposure method according to Claim 3, wherein said
25 concave and convex pattern is irregular.

6. A mask formed with an original pattern of alignment mark together with a pattern to be transferred, wherein the original pattern of said alignment mark is formed by

disposing, between adjacent blight portions having a width of not less than a predetermined value, one or more blight patterns having a width of less than said predetermined value with a pitch less than said predetermined value.

5 7. A mask according to Claim 6, wherein the maximum value of said pitch is determined so that a concave and convex pattern formed by transferring said blight pattern on said mask onto a substrate is not more than resolution of an alignment sensor.

10 8. A mask according to Claim 7, wherein said blight pattern is regularly arranged.

9. A mask according to Claim 7, wherein said blight pattern is irregularly arranged.

10. A mask formed with an original pattern of alignment
15 mark together with a pattern to be transferred, wherein the original pattern of said alignment mark is formed by disposing, between adjacent dark portions having a width of not less than a predetermined value, one or more dark patterns having a width of less than said predetermined
20 value with a pitch of less than said predetermined value.

11. A mask according to Claim 10, wherein the maximum value of said pitch is determined so that a concave and convex pattern formed by transferring said blight pattern on said mask onto a substrate is not more than resolution
25 of an alignment sensor.

12. A mask according to Claim 7, wherein said blight pattern is regularly arranged.

13. A mask according to Claim 7, wherein said blight pattern is irregularly arranged.

14. An exposure method including steps of:

forming a plurality of first patterns having a height
5 with a predetermined interval on a predetermined surface of
a substrate as an alignment mark; and

forming a plurality of second patterns having
a height with an interval of less than said predetermined
interval between adjacent first patterns.

10 15. An exposure method according to Claim 14 further
including steps of:

forming a film on the substrate on which said
alignment mark has been formed; and

flattening the surface of the film.

15 16. An exposure method according to Claim 15 further
including steps of:

detecting said alignment mark on the substrate
through said film and aligning said substrate; and
transferring a circuit pattern onto said substrate.

20 17. An exposure method according to Claim 14, further
including a step of optically detecting said alignment mark
by means of a mark detecting system to align the substrate,
wherein the distance between each of a plurality of said
second pattern is less than resolution of said mark
25 detecting system.

18. A mask including:

a plurality of first shading patterns arranged with a predetermined interval so as to form an alignment mark on the substrate; and

a plurality of second shading patterns disposed
5 between said first shading pattern with an interval which is less than said predetermined interval.

19. A mask including:

a plurality of light transmittivity areas which are spaced each other with a predetermined distance so as to
10 form an alignment mark on the substrate; and

a plurality of shading patterns, each of which is disposed between said light transmittivity areas with a distance of less than said predetermined distance.

20. An exposure method including a step of forming,
15 between a plurality of first patterns which constitute an alignment mark on a predetermined surface on a substrate and has a height, second patterns so as to reduce depression in a film covering the alignment mark.

21. A substrate polishing apparatus including:

20 a first holding member for holding a polishing member adapted to polish the surface of a film formed on the substrate;

a second holding member for holding the substrate such that the film surface on the substrate faces the
25 polishing member;

a rotary member for relatively rotating said first holding member and said second holding member with respect to each other; and

a change-over system for changing the direction of relative rotation between said first holding member and said second holding member.

22. A substrate polishing apparatus according to

5 Claim 21, wherein said change-over system changes the direction of rotation by a predetermined interval time.

23. A substrate polishing apparatus according to

Claim 21, wherein said change-over system changes the direction of rotation by a predetermined number of

10 revolution.

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